IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	09/839,957	Confirmation No. 4512
Applicant	:	Kent Wendorf	
Filed	:	04/19/2001	
TC/A.U.	:	2616	
Examiner	:	Daniel J. Ryman	
Docket No.	:	81862P247	
Customer No.	:	8791	

Commissioner for Patents
P.O. Box 1450
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APPEAL BRIEF

This brief is in furtherance of the Notice of Appeal, filed in this case on 09/26/2007.

This brief contains these items under the following headings, in the order and beginning on the pages set forth below:

The final page of this brief bears the attorney's signature.

I. Real Party in Interest

The real party in interest in this appeal is Cisco Technology, Inc.

II. Related Appeals and Interferences

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. Status of Claims

The status of claims in this application is as follows:

A. Total Number of Claims in Application

The application includes 53 claims.

B. Status of All the Claims

1. Claims cancelled: 1-33
2. Claims withdrawn from consideration but not cancelled: NONE
3. Claims pending: 34-53
4. Claims allowed: 44-53
5. Claims rejected: 34-43

C. Claims on Appeal

The claims on appeal are 34-43.

IV. Status of Amendments

No amendments after final rejection were proffered by applicant.

V. Summary of the Argument

Rejection of Claim 34 Under 35 U.S.C. § 101

Applicant respectfully submits that the Examiner has erred by rejecting the claim under 35 U.S.C. § 101 for failing to claim a process using computer technology in the following form: "A computer-readable medium encoded with a data structure [or software] for ..."

Claims 35-38 are grouped with claim 34.

Rejection of Claim 39 Under 35 U.S.C. § 101

Applicant respectfully submits that the Examiner has erred by rejecting the claim under 35 U.S.C. § 101 for failing to claim a system using computer technology in the following form: "A computer-readable medium encoded with a data structure [or software] for ..."

Claims 40-43 are grouped with claim 39.

VI. Summary of Claimed Subject Matter

The claimed subject matter provides a method and system for selecting buffers that store data to be communicated on a network to efficiently allocate the available bandwidth for transmitting the data.

To enable the Board to more quickly determine where the claimed subject matter is described in the specification, each of the independent claims involved in the appeal are presented with references to paragraphs in the specification in square brackets and to the drawings in parenthesis.

Nothing in this Summary of Claimed Subject Matter is intended to limit the scope of any claims in any way.

34.   A computer implemented method in which a computer performs the method comprising:

providing a plurality of buffers [0021] (Fig. 4, 430) to store data units, each of the plurality of buffers having an associated Inter Cell Gap (ICG) parameter [0023], Theoretical Departure Time (TDT) parameter [0024], speed-up counter [0033], and speed-up signal [0032];

calculating the TDT parameter [0024] for each one of the plurality of buffers based on the ICG parameter;

selecting one of the plurality of buffers [0036]-[0037] (527) having an asserted speed-up signal, if any, otherwise selecting one of the plurality of buffers [0026] (527) having a lowest TDT parameter;

incrementing the speed-up counter [0036] (560) associated with the selected buffer if a difference between a current time and the TDT parameter is greater than twice the ICG parameter [0036] (530-YES), otherwise decrementing the speed-up counter [0037] (537);

asserting the speed-up signal [0034] (580) associated with the selected buffer if the speed-up counter associated with the buffer has reached a set threshold (570-YES);

deasserting the speed-up signal [0034] (525) associated with the selected buffer if the speed-up counter associated with the buffer has reached a reset threshold (540-YES);

transmitting a data unit from the selected buffer [0020]; and

updating the TDT parameter [0026] associated with the selected buffer for each data unit transmitted from the selected buffer.

39.   A system [0018] (Fig. 2, 240) comprising:

a memory module [0021] (Fig. 3, 310) to store a plurality of buffers (Fig. 4, 430), each buffer containing a plurality of data units, each of the plurality of buffers having an associated Inter Cell Gap (ICG) parameter [0023], Theoretical Departure Time (TDT) parameter [0024], speed-up counter [0033], and speed-up signal [0032]; and

a scheduler module [0023] (Fig. 3, 320) coupled to the memory module having a computer [0047] that:

calculates the TDT parameter [0024] for each one of the plurality of buffers based on the ICG parameter;

selects one of the plurality of buffers [0036]-[0037] (527) having an asserted speed-up signal, if any, otherwise selecting one of the plurality of buffers [0026] (527) having a lowest TDT parameter;

increments the speed-up counter [0036] (560) associated with the selected buffer if a difference between a current time and the TDT parameter is greater than twice the ICG parameter [0036] (530-YES), otherwise decrementing the speed-up counter [0037] (537);

asserts the speed-up signal [0034] (580) associated with the buffer if the speed-up counter associated with the buffer has reached a set threshold (570-YES);

deasserts the speed-up signal [0034] (525) associated with the buffer if the speed-up counter associated with the buffer has reached a reset threshold (540-YES);

transmits a data unit from the selected buffer [0020]; and

updates the TDT parameter [0026] associated with the selected buffer for each data unit transmitted from the buffer.

VII. Grounds of Rejection to be Reviewed on Appeal

Claims 34-43 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

VIII. Argument

Rejections under 35 U.S.C. § 101

The issue is whether the Examiner erred in rejecting claims 34-43 under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

Principles of Law

On appeal, Appellants bear the burden of showing that the Examiner has not established a legally sufficient basis for the rejection of the claims.

"In reviewing the [E]xaminer's decision on appeal, the Board must necessarily weigh all of the evidence and argument." *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

The Federal Circuit states in *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) that "claims must be interpreted as broadly as their terms reasonably allow." The court further states that "the words of a claim 'are generally given their ordinary and customary meaning.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312, 75 USPQ2d 1321, 1326 (Fed. Cir. 2005) (en banc) (citations omitted). The "ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." Id. at 1313, 75 USPQ2d at 1326.

Laws of nature, physical phenomena, and abstract ideas are excluded from patent protection. *Diamond v. Diehr*, 450 U.S. 175, 185, 209 USPQ 1, 7 (1981).

The test for statutory subject matter is whether the claimed subject matter is directed to a "practical application," i.e., whether it is applied to produce "a useful, concrete and tangible result." *See State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373, 47 USPQ2d 1596, 1601 (Fed. Cir. 1998).

Claims 34-38

The Examiner first rejected independent claim 34 in an Office Action mailed on 04/12/2007. At that time the claim was directed to a "method comprising: [a recited process]." The Examiner argued that, while the claim was directed to a process, it fell within the judicial exception of an "abstract idea" because the claim could be implemented using computer programs and the method recited therefore amounted to a claim for computer code in the abstract. The Examiner then argued that such an abstract idea was statutory subject matter only if it was a practical application by physical transformation or if it was a practical application by producing a useful and tangible result. The Examiner found no practical application by physical transformation because there was no manipulation of a physical structure. The Examiner found no practical application by producing a useful and tangible result since, when implemented in software, the claim did not require that the software be executed by a computer.

In response to the Office Action, applicant amended claim 34 to claim a "computer implemented method in which a computer performs the method comprising: [a recited process]."

The Examiner rejected claim 34 as amended in a Final Office Action mailed 06/26/2007 arguing that:

> Current USPTO practice requires that software be claimed using the following form: "A computer-readable medium encoded with a data structure [or software] for ..." Any other language fails to define structural and functional interrelationships between the data structure and the computer software and hardware components which permit

the data structure's functionality to be realized. As such, any other

language for claiming a computer program is non-statutory.

As a preliminary matter, applicant assumes that the Examiner's reference to "USPTO practice" is a reference to the "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" which was published in the Official Gazette on November 22, 2005 at 1300 Off. Gaz. Pat. Office 142, and similar documents prepared to assist Examiners in the examination of patent applications. As stated on page 2 of the Guidelines:

> These Guidelines do not constitute substantive rulemaking and hence
> do not have the force and effect of law. These Guidelines have been
> designed to assist USPTO personnel in analyzing claimed subject
> matter for compliance with substantive law. Rejections will be based
> upon the substantive law and it is these rejections which are
> appealable.

Thus the proper inquiry is not whether the claims on appeal are claimed according to current USPTO practice but rather whether claim 34 as presented represents statutory subject matter under 35 U.S.C. § 101 according to the applicable decisions of the courts and this Board.

The Examiner agrees that claim 34 is directed to a process, one of the four classes of subject matter under 35 U.S.C. § 101. However, Supreme Court decisions after the 1952 Patent Act have rejected a "purely literal reading" of the process provision and emphasized that not every "process" is patentable. *Parker v. Flook*, 437 U.S. 584, 589 (1978). However, as *Flook* acknowledged, "[t]he line between a patentable 'process' and an unpatentable 'principle' is not always clear." *Flook*, 437 U.S. at 589.

"Abstract ideas" are one type of subject matter that the Supreme Court has consistently held fall beyond the broad reaches of patentable subject matter under § 101. *In re Comisky*, 499 F.3d 1365, 1376 (Fed. Cir. 2007). The Federal Circuit has held that the focus of the § 101 issue is whether the "invention, as a whole, produces a tangible, useful, result." *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1359 (Fed. Cir. 1999). In *Comiskey* the court further elaborated that "processes involving mathematical algorithms used in computer technology [were found] patentable because they claimed practical applications and were tied to specific machines." *Comiskey* at 1377.

In rejecting claim 34 in the Office Action mailed on 04/12/2007, the Examiner argued that the claim was an "abstract idea" because the claim could be implemented using computer programs the claim did not require that the software be executed by a computer. Applicant then amended the claim to require that the method be executed by a computer expressed as "A computer implemented method in which a computer performs the method comprising: [a recited process]." The Examiner than rejected the claim *only* because the claim was not expressed as "A computer-readable medium encoded with a data structure [or software] for ..." Thus the Examiner tacitly admitted that the claim did now produce a tangible, useful, and practical result and, according to the holdings of *AT&T* and *Comiskey*, was therefore not directed to an abstract idea.

Applicant can find no basis for a requirement that processes used in computer technology be claimed as "A computer-readable medium encoded with a data structure [or software] for ..." in statute or case law. One of the claims found to be statutory in *AT&T* was of the form "A method for use in a [recited system], said method comprising the steps of: [recited process steps]." *AT&T*, 172 F.3d at 1354.

Thus applicant's claim in the form of "A computer implemented method in which a computer performs the method comprising: [a recited process]" comfortably falls within the scope of § 101 according to the holdings of *AT&T* and *Comiskey*.

In *AT&T* the Federal Circuit held patentable "a process that uses the Boolean principle in order to determine the value of the PIC indicator" and that "require[d] the use of switches and computers." *AT&T*, 172 F.3d at 1355, 1358. Likewise applicant's claimed process that uses calculations to determine a Theoretical Departure Time (TDT) parameter and a speed-up signal used to select a physical buffer requiring the use of a computer should be held patentable.

For the foregoing reasons, the Examiner erred in rejecting claim 34 under 35 U.S.C. § 101 as directed to non-statutory subject matter.

Claims 39-43

The Examiner first rejected independent claim 39 under 35 U.S.C. § 101 in an Office Action mailed on 04/12/2007. At that time the claim was directed to a "system comprising a memory module for storing a plurality of buffers [containing recited content]; and a scheduler module coupled to the memory module for: [performing a recited process on the content of the buffers]." The Examiner rejected the claim as a non-statutory "abstract idea" using the same reasoning as applied to claim 34 discussed above.

In response to the Office Action, applicant amended claim 39 to claim a "system comprising a memory module to store a plurality of buffers [containing recited content]; and a scheduler module coupled to the memory module having a computer that: [performs a recited process on the content of the buffers]."

The Examiner rejected claim 39 as amended in a Final Office Action mailed 06/26/2007 using the same reasoning as applied to claim 34 discussed above.

As with claim 34, the proper inquiry is not whether the claims on appeal are claimed according to current USPTO practice but rather whether claim 39 as presented represents statutory subject matter under 35 U.S.C. § 101 according to the applicable decisions of the courts and this Board.

The Examiner agrees that the system of claim 39 is directed to a machine, one of the four classes of subject matter under 35 U.S.C. § 101.

In rejecting claim 39 in the Office Action mailed on 04/12/2007, the Examiner argued that the claim was an "abstract idea" because the claim could be implemented using computer programs the claim did not require that the software be executed by a computer. Applicant then amended the claim to provide that the system includes a computer that performs the recited process. The Examiner than rejected the claim *only* because the claim was not expressed as "A computer-readable medium encoded with a data structure [or software] for ..." Thus the Examiner tacitly admitted that the claim did now produce a tangible, useful, and practical result and, according to the holdings of *AT&T* and *Comiskey*, was therefore not directed to an abstract idea.

Applicant can find no basis for a requirement that machines using computer technology be claimed as "A computer-readable medium encoded with a data structure [or software] for ..." in statute or case law. Applicant's claim in the form of "A system comprising a memory module to store a plurality of buffers [containing recited content]; and a scheduler module coupled to the memory module having a computer that: [performs a recited process on the content of the buffers]" comfortably falls within the scope of § 101 according to the holdings of *AT&T* and *Comiskey*.

Even if some of the elements recited to characterize the computer included in the scheduler module are regarded as mental steps, the words "a scheduler module coupled to the memory module having a computer that..." serve to tie the recited process steps to the particular machine of the computer. Further, the recited steps are further tied to the claimed memory module in terms of operating on buffers stored thereon. Both the memory module and the computer of the scheduler module are transformed to become a machine with a specific function as recited in the claim.

For the foregoing reasons, the Examiner erred in rejecting claim 39 under 35 U.S.C. § 101 as directed to non-statutory subject matter.

XI. Conclusion

For the foregoing reasons, applicant submits that the subject matter claimed in claims 34-43 is statutory subject matter under 35 U.S.C. § 101, and applicant asks that the decision of the Examiner rejecting applicant's claims 34-43 be reversed.

XII. Appendix of Claims

The text of the claims involved in the appeal is:

34.   A computer implemented method in which a computer performs the method comprising:

providing a plurality of buffers to store data units, each of the plurality of buffers having an associated Inter Cell Gap (ICG) parameter, Theoretical Departure Time (TDT) parameter, speed-up counter, and speed-up signal;

calculating the TDT parameter for each one of the plurality of buffers based on the ICG parameter;

selecting one of the plurality of buffers having an asserted speed-up signal, if any, otherwise selecting one of the plurality of buffers having a lowest TDT parameter;

incrementing the speed-up counter associated with the selected buffer if a difference between a current time and the TDT parameter is greater than twice the ICG parameter, otherwise decrementing the speed-up counter;

asserting the speed-up signal associated with the selected buffer if the speed-up counter associated with the buffer has reached a set threshold;

deasserting the speed-up signal associated with the selected buffer if the speed-up counter associated with the buffer has reached a reset threshold;

transmitting a data unit from the selected buffer; and

updating the TDT parameter associated with the selected buffer for each data unit transmitted from the selected buffer.

35.   The method according to claim 34, wherein the method is implemented in an Asynchronous Transfer Mode Network.

36.   The method according to claim 34, wherein each of the plurality of buffers further has an associated cell counter, the method further comprising:

        incrementing the cell counter for each data unit stored in the buffer;

        decrementing the cell counter for each data unit transmitted from the buffer; and

        wherein selecting one of the plurality of buffers includes selecting one of the plurality of buffers with a cell counter having a non-zero count.

37.   The method according to claim 34, the method further comprising receiving the plurality of data units along a plurality of input virtual connections in a network.

38.   The method according to claim 34, the method further comprising deasserting the speed-up signal associated with the selected buffer and resetting the speed-up counter associated with the selected buffer if the TDT parameter is greater than the current time.

39.   A system comprising:

        a memory module to store a plurality of buffers, each buffer containing a plurality of data units, each of the plurality of buffers having an associated Inter Cell Gap (ICG) parameter, Theoretical Departure Time (TDT) parameter, speed-up counter, and speed-up signal; and

        a scheduler module coupled to the memory module having a computer that:

calculates the TDT parameter for each one of the plurality of buffers based on the ICG parameter;

selects one of the plurality of buffers having an asserted speed-up signal, if any, otherwise selecting one of the plurality of buffers having a lowest TDT parameter;

increments the speed-up counter associated with the selected buffer if a difference between a current time and the TDT parameter is greater than twice the ICG parameter, otherwise decrementing the speed-up counter;

asserts the speed-up signal associated with the buffer if the speed-up counter associated with the buffer has reached a set threshold;

deasserts the speed-up signal associated with the buffer if the speed-up counter associated with the buffer has reached a reset threshold;

transmits a data unit from the selected buffer; and

updates the TDT parameter associated with the selected buffer for each data unit transmitted from the buffer.

40.   The system according to claim 39, wherein the system is a line card used in an Asynchronous Transfer Mode Network.

41.   The system according to claim 39, wherein each of the plurality of buffers further has an associated cell counter and the computer further:

increments the cell counter for each data unit stored in the buffer;

decrements the cell counter for each data unit transmitted from the buffer; and

selects from one of the plurality of buffers with a cell counter having a non-zero count.

42. The system according to claim 39, the system receiving the plurality of data units along a plurality of input virtual connections in a network.

43. The system according to claim 39, in which the computer further deasserts the speed-up signal associated with the selected buffer and resets the speed-up counter associated with the selected buffer if the TDT parameter is greater than the current time.

XIII. Appendix of Evidence

No evidence is included with this brief.

XIII. Appendix of Related Decisions

There are no related proceedings.

Respectfully submitted,
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